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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/354,464

07/15/1999

HIROMI WATANABE

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EXAMINER

HON, SOW FUN

ART UNIT

PAPER NUMBER

1772

10

DATE MAILED: 05/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/354,464

Applicant(s)

WATANABE ET AL.

Examiner

Sow-Fun Hon

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1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 24-99, 145 and 146 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24-99, 145 and 146 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Response to Amendment***

***Withdrawn Rejections***

1. The 35 U.S.C. 112, 2<sup>nd</sup> paragraph rejection in Paper # 8, paragraph 3 (mailed 07/18/01) of claims 24-99 has been withdrawn due to Applicant's amendment in Paper # 9 (filed 01/17/02).

***Rejections Repeated***

2. The 35 U.S.C. 103(a) rejection of claims 24-99 over Iioka et al. in view of Herman et al. has been repeated for reasons previously of record in Paper # 8, paragraph 4 (mailed 07/18/01).

***New Rejections***

***Claim Rejections - 35 USC § 112***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 146 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant is respectfully requested to specify the location in the specification wherein the invention is described such that the first thermoplastic resin has a melting point of

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from about 105°C to 110°C, and the second thermoplastic resin which is expandable by heat treatment has a melting point of from 130°C to 135°C.

6. Claim 146 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 146 is dependent on claim 145 which recites that the first thermoplastic resin has a higher melting point than the second thermoplastic resin, and thus it is not possible for the first thermoplastic resin to have a melting point of from about 105°C to 110°C, and for the second thermoplastic resin to have a melting point of from 130°C to 135°C as recited in dependent claim 146. Thus claim 146 has been interpreted as having had the two melting point ranges mistakenly switched, and is rejected as such.

***Claim Rejections - 35 USC § 103***

7. Claims 145-146 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iioka et al. in view of Herman et al. and Kallander et al. (US 3,049,463).

Iioka et al. has a heat-insulating paper container which has a thick expanded (foamed) heat-insulating layer in the area of the outer surface of the body member and is provided with printing of an organic solvent based ink. The paper sheet to be used in producing the heat-insulated container has preferably a basis weight in the range from 100 g/m<sup>2</sup> to 400 g/m<sup>2</sup>. It is also preferred that the paper sheet has a water content within the range for about 3 % to about 10 % (column 6, lines 34-38). Iioka et al. teaches that the film on the outer surface must be a low-density polyethylene (LDPE) and the film on the inner surface must be a medium or high density polyethylene (MDPE, HDPE) (column 6, lines 13-16). The thickness of the low density

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polyethylene is taught to be 25 to 60 microns (0.06 mm) (column 6, lines 20-25). Iioka et al. fails to disclose the melting points of the polyethylenes.

Herman et al. discloses that the melting temperature of LDPE is in the range of 102 to 112 °C, and that that of MDPE is 110°C to 120°C, along with other physical properties (Table 7, page 413). It follows that HDPE has a higher melting temperature than MDPE, and encompasses the range of 130°C to 135°C. The LDPE and the MDPE/HDPE would have the corresponding claimed melt flow rates (MFR).

Herman et al. merely teaches the claimed physical properties are inherent in the LDPE and MDPE/HDPE resins used in the invention of Iioka et al., in order to obtain a heat-insulating paper container with the desired laminate properties.

In addition, Iioka et al. teaches that the ink to be used in printing is of such a type that very small amounts of solvent components remain in the printed surface to accelerate film expansion (foaming) (column 4, lines 17-29) and to allow for the expansion of the ink along with the expansion of the film. Iioka et al., however, fails to teach that the ink is specifically applied ontop of the expandable film as well as between the base paper and the foamable resin layer.

Kallander et al. is directed to decorated foamed plastic wherein the ink is applied to (contacted with) the expandable (foamable) surface (column 1, lines 1-20). Kallander et al. merely demonstrates that it would have been obvious to one of ordinary skill in the art to have also printed the ink on top of the foam insulated area as a variation of the design of Iioka et al. since printing ontop of the foam is well known in the art.

*Response to Arguments*

8. Applicant's arguments filed 01/17/02 have been fully considered but they are not persuasive.

Applicant argues that those having ordinary skill in the art would not have been motivated to modify the design of Ilioka et al. by applying the ink over the outer exposed surface of the foam insulation rather than between the paper base and the foam insulation. Kallander et al. is provided that printing ontop of the foam surface is an obvious variation of printing ontop of the paper surface.

In addition, Applicant argues that Ilioka et al. expressly teaches against printing ontop of the foam surface. Applicant is respectfully apprised that there is no express teaching against printing ontop of the foam surface in Ilioka et al.

Applicant argues that Ilioka et al. clearly teaches that the foamed layer having portions of differing thicknesses is achieved by printing a solvent based ink onto the base paper layer so that the ink is located between the base paper layer and the foamable thermoplastic resin layer, whereby the pigment in the ink lowers the strength of adhesion of the thermoplastic resin layer to the paper sheet. Applicant is respectfully reminded that the present claims 30-33, 51-54 recite that the interface defined between the base paper and the foamable resin is at least partially filled with a layer of self-expansile ink, so that Ilioka et al. clearly meets the recited limitation. What Applicant is arguing is that it would not have been obvious to one of ordinary skill in the art to have applied ink ontop of the foamable resin as well. Applicant is thus respectfully apprised of Kallander et al. which teaches that it is well known in the art to apply ink ontop of foams.

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Applicant argues that Ilioka et al. does not teach or suggest use of an ink which follows the expansion of the foamable thermoplastic film. Applicant is respectfully reminded that Ilioka et al. teaches that the resin which is the primary component of inks must be capable of assuring strength of bond to the polyethylene resin ('631, column 5, lines 60-68), thus teaching use of an ink which bonds and thus follows the expansion of the foamable polyethylene resin.

Applicant argues Ilioka et al. teaches an ink which requires large amounts of solvents, whereas Applicant's invention contains as little solvent as possible. Applicant is respectfully reminded that the claims recite an ink which follows the expansion of the foamable resin.

### *Conclusion*

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


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Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (703)308-3265. The examiner can normally be reached Monday to Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (703)308-4251. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9311.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

8H  
04/29/02

  
HAROLD PYON  
SUPERVISORY PATENT EXAMINER  
1772

4/29/02